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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,538	04/08/2004	Raymond Ford Johnson	CJOHN.00002	8374

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Scott L. Harper
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Dallas, TX 75380

EXAMINER

DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/820,538

Applicant(s)

JOHNSON ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 21-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 21-38 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Applicant's election with traverse of claims 1-20 in the reply filed on October 24, 2006 is acknowledged. The traversal is on the ground(s) that the election requirement is "improper". This is not found persuasive because of the separate utility and varied distinct features of the different groups.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,5-10,12,14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sieg in view of Pearson patent 5,203,696. Sieg discloses a system for filtering **and concentrating** contaminants such as machine contaminants from a re-circulating liquid stream that comprises a system having separator 30 with filtering membrane 31 therein, the membrane being cylindrical with flow introduced into the annulus or ring that surrounds it (see column 7, lines 59-68), and the system further comprising first and second pumps 19 and 29 that propel fluid through the system, including fluid supplied to the filter and that used for backwashing (column 4, lines 47-53 and column 6, lines 1-13, etc., pumps 19 and 29 providing pressurized delivery of the fluid. The pressure for backwashing is also in part provided by a compressed air pump means (column 6, lines 8-13).

The claims all differ in requiring that the fluid be delivered to the filtering membrane with sufficient pressure to promote kinetic energy into turbulent flow. Pearson teaches to intensify the flow rate and pressure of fluid being provided to any filtration system by a system of double-acting piston pumps to provide turbulent flow so as to make filtering membranes more self-cleaning (column 3, lines 22-37 and column 6, lines 2-8). To have modified the system and method of Sieg by supplying the fluid to the membrane separator at sufficient flow and pressure to result in turbulent flow would not have constituted an inventive step, since Pearson teaches to intensify the flow rate of fluid to filters, so as to continuously flush away a proportion of contaminants building

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up on the membrane and recycle some of the energy of pumping.

Filtrate is routed to a collection reservoir 17, while fluid with captured contaminant resulting from backwashing of the filter is routed through reservoir 12 and concentrator 13/15, with concentrated contaminants containing smaller amounts of fluid removed to container or reservoir 18.

Regarding claims 8-10,15,17,42,43,60 and 61, use of a system of parallel or double acting piston/cylinder devices and associated poppet valves is taught by Pearson beginning at the Abstract, and see column 2, lines 29-44 regarding details of the double acting pistons.

Claims 2,4,11,13,15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sieg in view of Pearson patent 5,203,696 as applied to claim 1 above, and further in view of Mitcheson patent 5,434,381. Regarding claims 2,4,11,13,15 and 17, a plurality of membrane filter separator/concentrators is suggested by Sieg at column 9, lines 56-58. Sieg is directed to membrane filtration of an EDM OR ECM machine. These claims all differ in requiring membrane filters or membrane concentrators in series. However, Mitcheson discloses membrane filtration/ or concentration of ECM or EDM fluid, in which membrane filters/concentrators are coupled in series or in parallel (Abstract, etc.). It would have been additionally obvious to one of ordinary skill in the art to have

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augmented the Sieg arrangement by providing such series filtration and concentration of the fluid, as suggested by Mitcheson, in order to provide enhanced cleaning of the fluid , in order to allow enhanced machining to yield products having fewer defects.

For various dependent claims: Mitcheson teaches a drying source for claim 4 (column 5, line 68-column 6, line 2), series arrangement of claims 11 and 13 (figure), with Sieg disclosing poppet valves for claims 15 and 17 as previously noted.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sieg in view of Pearson patent 5,203,696, and Mitcheson patent 5,434,381, as applied to claim 2 above, and further in view of Backman patent 4,927,547. These claims further differ in requiring a purge air step to remove the contaminants from separator and concentrator. To have additionally modified the Sieg system by providing such purge air operation to remove the contaminants, would have been obvious, since Backman teaches at column 3, lines 11-16, that such purge air operation increases the thoroughness of the cleaning.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sieg in view of Pearson patent 5,203,696 as applied to claim 1 above, and further in view of Lewis patent 4,646,317. Claim 18 requires the separator to be attached to a wheeled transport, such feature shown at column 3, lines 64-66 of Lewis for a separator servicing EDM machines (column 1, lines 4-11 and 28-35). It would have been

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additionally obvious to have adapted such wheeled transport of Lewis to Sieg, so as to regenerate and recycle the working fluid of multiple, spaced EDM machines.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sieg in view of Pearson patent 5,203,696, and Mitcheson patent 5,434,381, as applied to claim 2 above, and further in view of Cosack et al patent 4,136,029. Claims 19 and 20 also require a transition plate to distribute the influent fluid stream into the separator.

Cosack suggests such type of plate useable for membrane filtration subject to pressurization (as is the case with Sieg); see the Abstract and column 2, lines 7-45. It would have been further obvious to have incorporated a distribution plate as in Cosack, into the system of Sieg, in order to simply evenly distribute the influent flow across the entire extent of the membrane filter surface to effect more uniform filtration and separation.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sieg in view of Pearson patent 5,203,696 as applied to claim 1 above, and further in view of Cosack et al patent 4,136,029. Claims 19 and 20 also require a transition plate to distribute the influent fluid stream into the separator. Cosack suggests such type of plate useable for membrane filtration subject to pressurization (as is the case with Sieg); see the Abstract and column 2, lines 7-45. It would have been further obvious to have incorporated a distribution plate as in Cosack, into the system of Sieg, in order to simply evenly distribute the influent flow across the entire extent of the membrane filter surface to effect more uniform filtration and separation.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patents 4,222,874 and 4,158,629 are made of record since they were made of record in a related PCT Application PCT/US05/02312.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

December 2, 2006

Joseph Drodge
12/2/2006